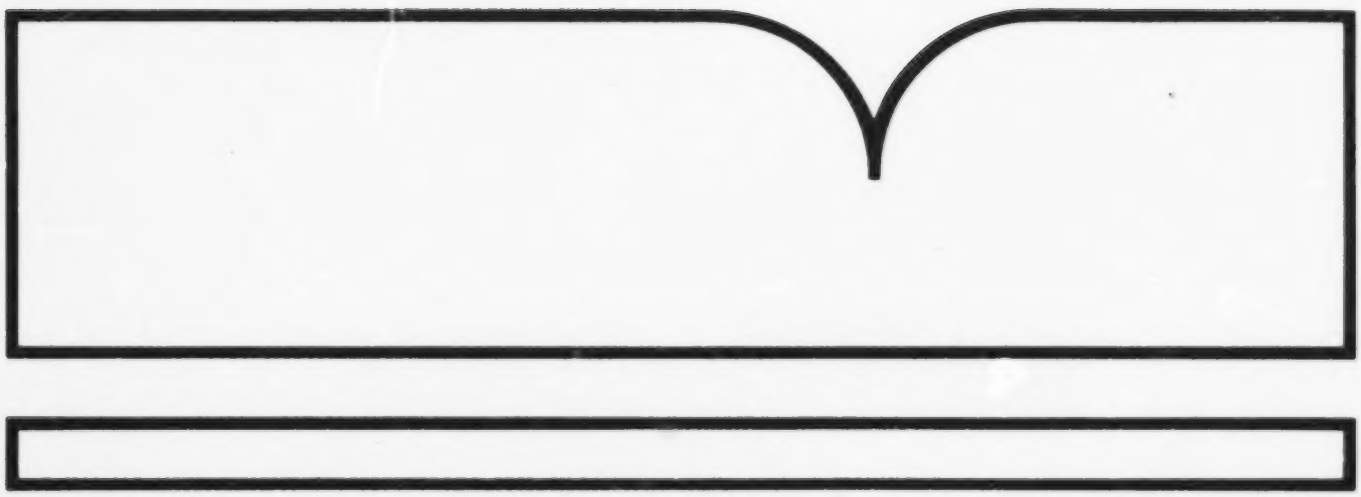
PB86-224920

Superfund Record of Decision (EPA Region 3)
Taylor Borough Site
Lackawanna County, Pennsylvania
(Second Remedial Action, March 1986)

(U.S.) Environmental Protection Agency
Washington, DC

17 Mar 86



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EPA/ROD/R03-86/020
March 1986

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EPA

Superfund Record of Decision:

Taylor Borough, PA
(Second Remedial Action, 03/17/86)

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16. ABSTRACT

The Taylor Borough site is located in the Borough of Taylor in Lackawanna County, Pennsylvania. The site is an abandoned landfill located in a strip mine. Underlying the site is a series of underground mines. As a result of the landfill operation, which ceased in 1968, the topography of the site consists of relatively rolling terrain between steep slopes of mine spoil piles and unreclaimed strip mines.

In June 1985, a Record of Decision (ROD) was approved for the site. The ROD deferred a decision on ground water action because analytical results for ground water samples collected in April 1985 were not available. Additional consideration of site ground water conditions was also needed because of unusual hydrogeologic conditions.

In the June 1985 ROD, reference is made to a release of contaminants into a coal seam based on the analysis of samples collected from Well 3C in September 1984. As noted in the RI, the data validation review found that the reported results are of questionable accuracy. Additionally, the two subsequent sampling efforts that were attempted did not identify any contamination. Since no release of site contaminants to the ground water has been documented, there is no need for ground water remedial action at this time; however, a monitoring program is warranted to verify that no release is occurring. To meet this objective, existing monitoring wells in the coal seams underlying the site (wells 1B, 2C, 3C, 4C, 5B, 6A, 7C, 7D, 8B) should be monitored on a semiannual basis for
(See Attached Sheet)

17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision Taylor Borough, PA (Second Remedial Action) Contaminated Media: None - no observed release Key contaminants: N/A		
18. DISTRIBUTION STATEMENT	19. SECURITY CLASS *(This Report)* None	21. NO. OF PAGES 16
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EPA/ROD/R03-86/020
Taylor Borough, PA
(Second Remedial Action)

16. ABSTRACT (continued)

all priority pollutant volatile organics and Hazardous Substance List metals for, at a minimum, five years after the surface remedial action is completed. It is estimated that the current cost to conduct one round of sampling and analysis for metals and volatiles at the monitoring wells identified is $8,000, or $16,000 for semiannual monitoring.

RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION

Site: Taylor Borough Site, Lackawanna County, Pennsylvania

Documents Reviewed:

I am basing my decision principally on the following documents describing the analysis of cost effectiveness and feasibility of remedial alternatives for the Taylor Borough Site. Unless otherwise specified, the underlying technical information is included in these reports:

- "Feasibility Study Report", (Draft), Taylor Borough Site, Lackawanna County, Pennsylvania, (NUS Corp. May, 1985)

- "Remedial Investigation Report", (Draft), Taylor Borough Site, Lackawanna County, Pennsylvania, (NUS Corp. May, 1985)

- Summary of Remedial Alternative Selection

- Recommendations by the Pennsylvania Department of Environmental Resources

- Taylor Borough, Record of Decision dated June 28, 1985.

- Staff summaries and recommendations.

Description of the Selected Remedy:

Since no release of site contaminants to the ground water has been documented, there is no need for ground water remedial action at this time; however, a monitoring program is warranted to verify over time that no release is occurring. To meet this objective existing monitoring wells in the coal seams underlying the site (wells 1B, 2C 3C, 4C, 5B, 6A, 7C, 7D, 8B) should be monitored on a semi-annual basis for all priority pollutant volatile organics and Hazardous Substance List metals for, at a minimum, five years after the surface remedial action required by the June 28, 1985 Record of Decision is completed. The National Contingency Plan would permit the period to be extended if necessary to protect public health or the environment.

Declarations

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the National Contingency Plan (40 C.F.R. Part 300), I have determined that the monitoring activities described above together with proper operation and maintenance constitute a cost-effective remedy which mitigates and minimizes damage to public health, welfare, and the environment.

The State of Pennsylvania has been consulted and agrees with the approved remedy. Following the implementation of the remedial actions identified in the Record of Decision signed on June 28, 1985, the monitoring activities identified by this Record of Decision will be required

to ensure the continued effectiveness and level of protection of the remedy. These activities will be considered part of the approved action and eligible for Trust Fund monies for a period of one year.

I have determined that the action being taken is appropriate when balanced against the availability of Trust Fund monies for use at other sites.

3/17/86
Date

James M. Seif
Regional Administrator
EPA Region III

Summary of Remedial Alternative Selection
Taylor Borough Site

Description and Current Site Status

The Taylor Borough site is located in the Borough of Taylor in Lackawanna County, Pennsylvania. The site is an abandoned landfill located in a strip mine. Underlying the site is a series of underground mines. As a result of the landfill operation, which ceased in 1968, the topography of the site consists of relatively rolling terrain between steep slopes of mine spoil piles and unreclaimed strip pits. Figure 1 is a site location map.

At the site there were six (6) surface drum disposal areas, as identified on the site map (Figure 2). During the Fall of 1983 EPA implemented an immediate removal action and removed approximately 1,200 drums from these six areas.

From March 1984 to May 1985 EPA conducted a Remedial Investigation and Feasibility Study (RI/FS) of the site. The remedial investigation documented soil contamination in five of the former surface drum disposal areas, surface water contamination in two small ponded areas (ponds 1 and 2 in Figure 3) and approximately 125 crushed and intact drums and remnants remaining on the surface or partially buried. An extensive hydrogeologic investigation was also conducted. A feasibility study was performed to examine various alternatives to remediate the site contamination. Based on conclusions drawn from the RI/FS and with the concurrence of the Pennsylvania Department of Environmental Resources (DER), the EPA Region III Administrator signed a Record of Decision (ROD) on June 28, 1985 which called for the following remedial actions:

1. Removal and offsite disposal of the approximately 125 drums and remnants.

2. Collection and treatment of contaminated water in Ponds 1 and 2.

3. Excavation and offsite disposal of contaminated soils, sediments and wastes from former drum storage areas 1 and 2, Ponds 1 and 2.

4. Proper backfilling and placement of a 24 inch soil cover over the area including and between drum storage areas 3 and 6 and over area 4.

The June 1985 ROD deferred a decision on ground water action. At the time the ROD was signed, analytical results for ground water samples collected in April 1985 were not available. In addition, because of the unusual hydrogeologic conditions at the site, as further discussed below, additional consideration of site ground water conditions was needed.

Site Geology/Hydrogeology

The municipal landfill is located in a strip mine which sits over an extensive series of abandoned underground mines. Due to the extensive mining, ground water beneath the site has been significantly altered in

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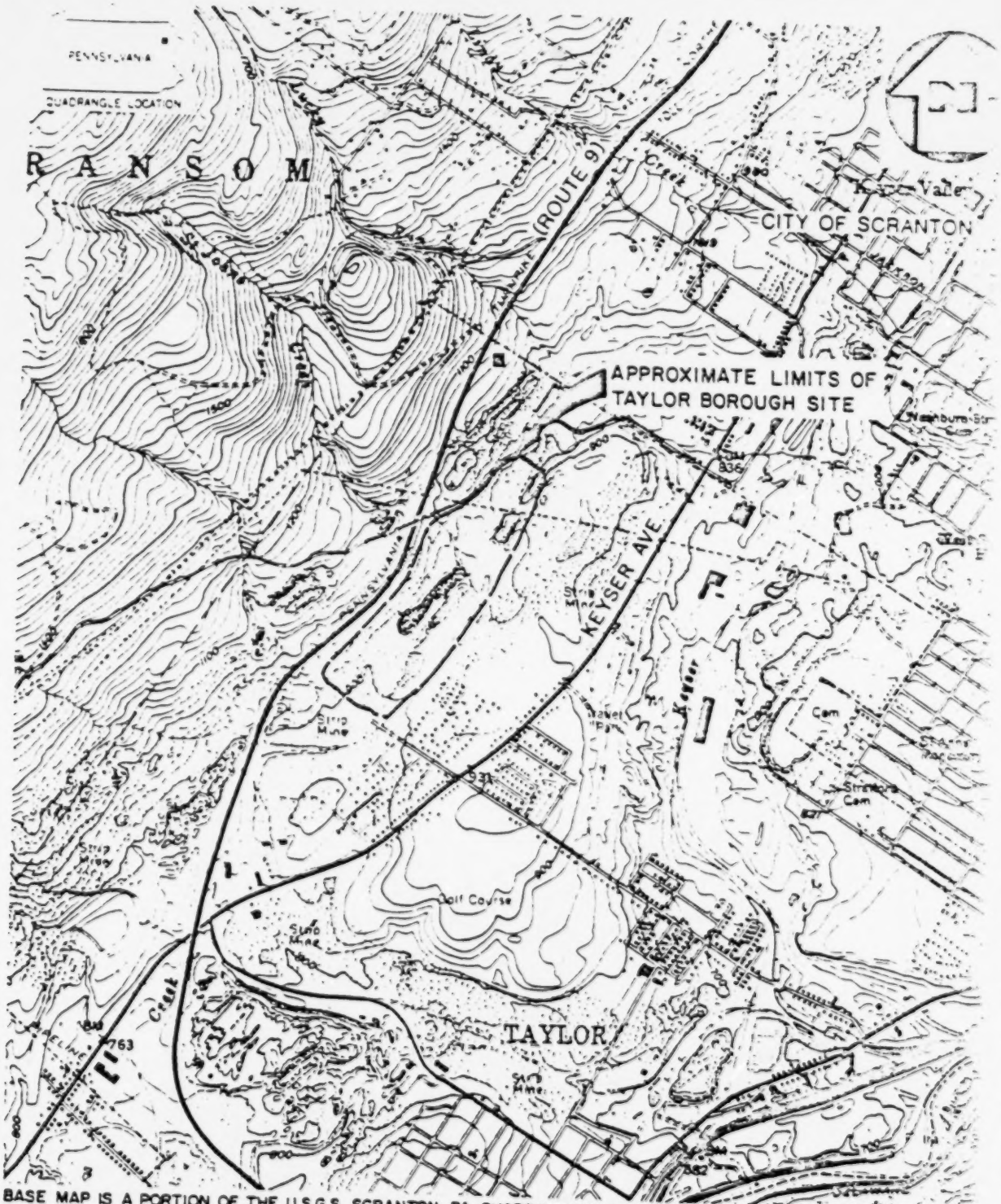

BASE MAP IS A PORTION OF THE U.S.G.S. SCRANTON, PA QUADRANGLE (7.5 MINUTE SERIES, 1947, PHOTOREVISED 19 AND 1976). CONTOUR INTERVAL 20'.

FIGURE 1

LOCATION AND VICINITY MAPS
TAYLOR BOROUGH SITE, TAYLOR BOROUGH, PA

SCALE: 1" = 2000'

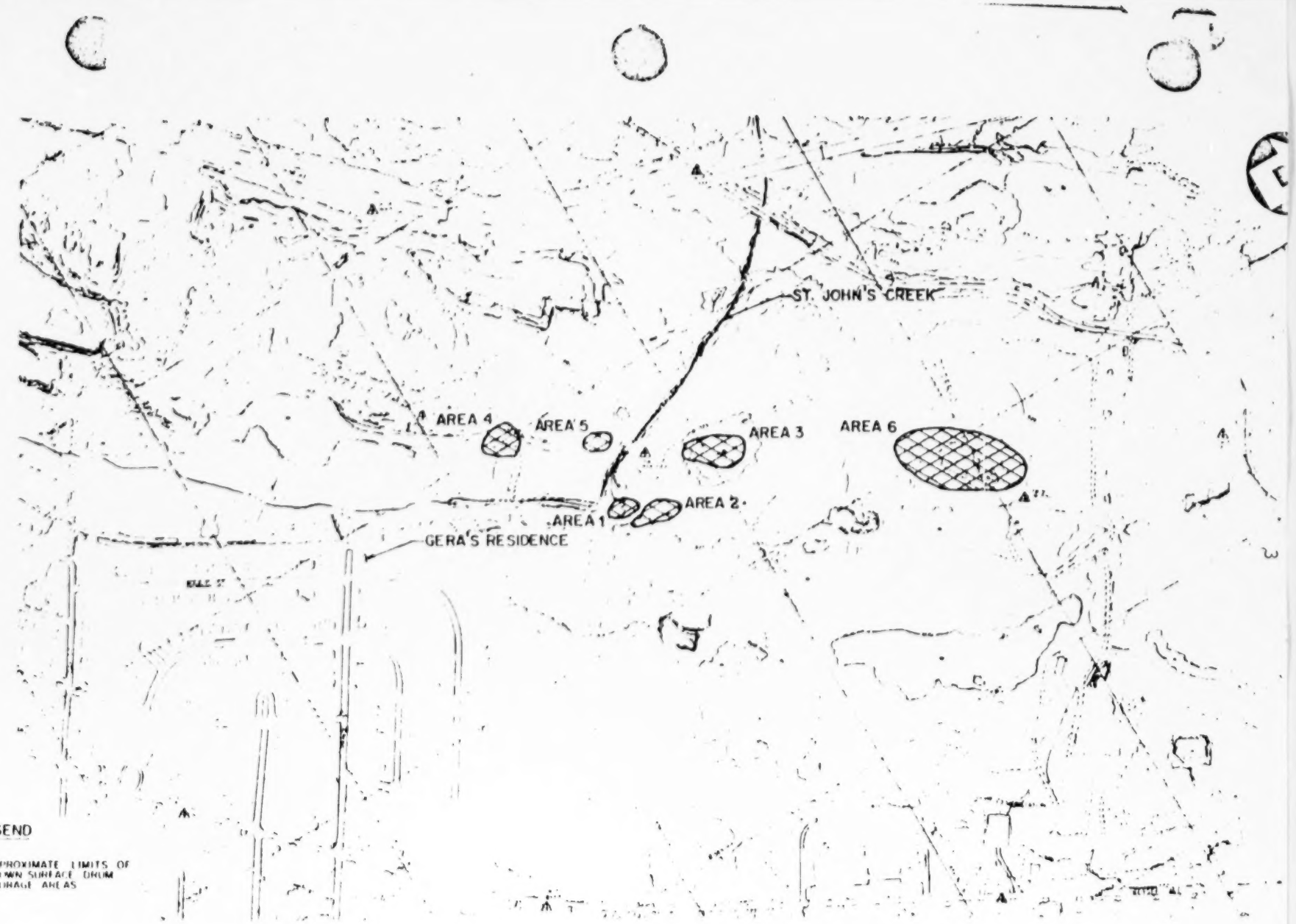

FIGURE 2

SURFACE DRUMS STORAGE AREAS
TAYLOR BOROUGH SITE, TAYLOR BOROUGH, PA

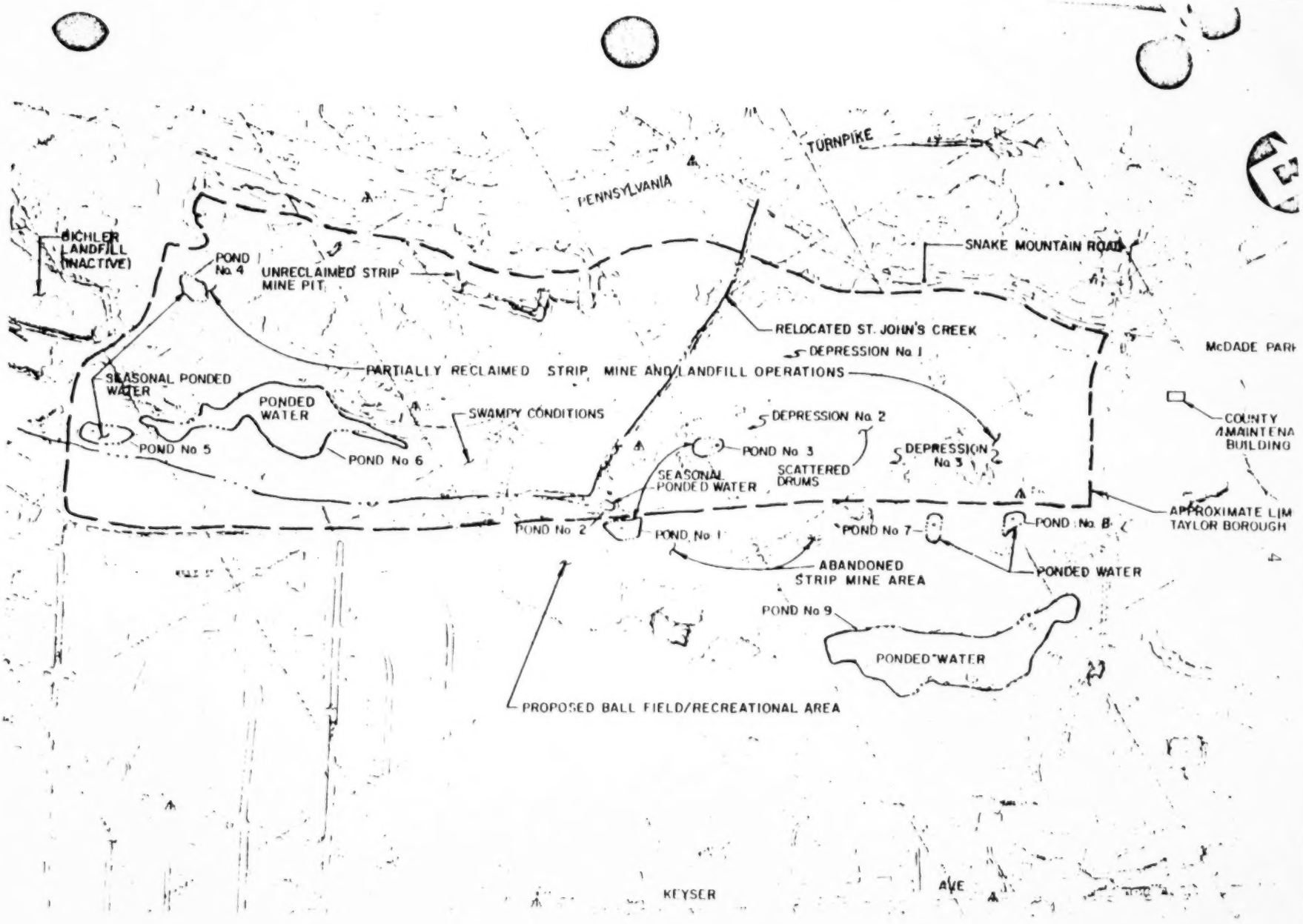

FIGURE 3

EXISTING CONDITIONS
TAYLOR BOROUGH SITE, TAYLOR BOROUGH, PA

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400 0 400
SCALE IN FEET

both quality and yield. Bedrock beneath the site has naturally-occurring fractures; however, mine voids have caused further rock fracturing and subsidence which has impacted ground water flow patterns. Unconsolidated soil deposits have been disturbed through surface mining operations. As a result, the hydrogeologic characteristics have been substantially altered from natural conditions.

The RI found that major aquifers that may have existed prior to mining have been dewatered. There are some perched water zones within the site area controlled by the presence of low-permeability till deposits or strip mine spoil containing varying quantities of clay and silt material. There is not, however, a continuous ground water level across the site.

Water entering the site and moving in the subsurface as ground water flows to a vast mine pool underlying the Lackawanna Valley. The water moves by either vertically migrating through fractured rock and mine openings (air shafts, slope openings, unsealed boreholes) or by following geologic structure and intercepting the mine pool. The mine pool is approximately 300 to 350 feet below the site surface. Based on the Ground Water Protection Strategy categories the mine pool has the characteristics of an unpotable Class 3 aquifer because of mine drainage contamination. Approximately four miles downgradient of the site the mine pool discharges to the Lackawanna River.

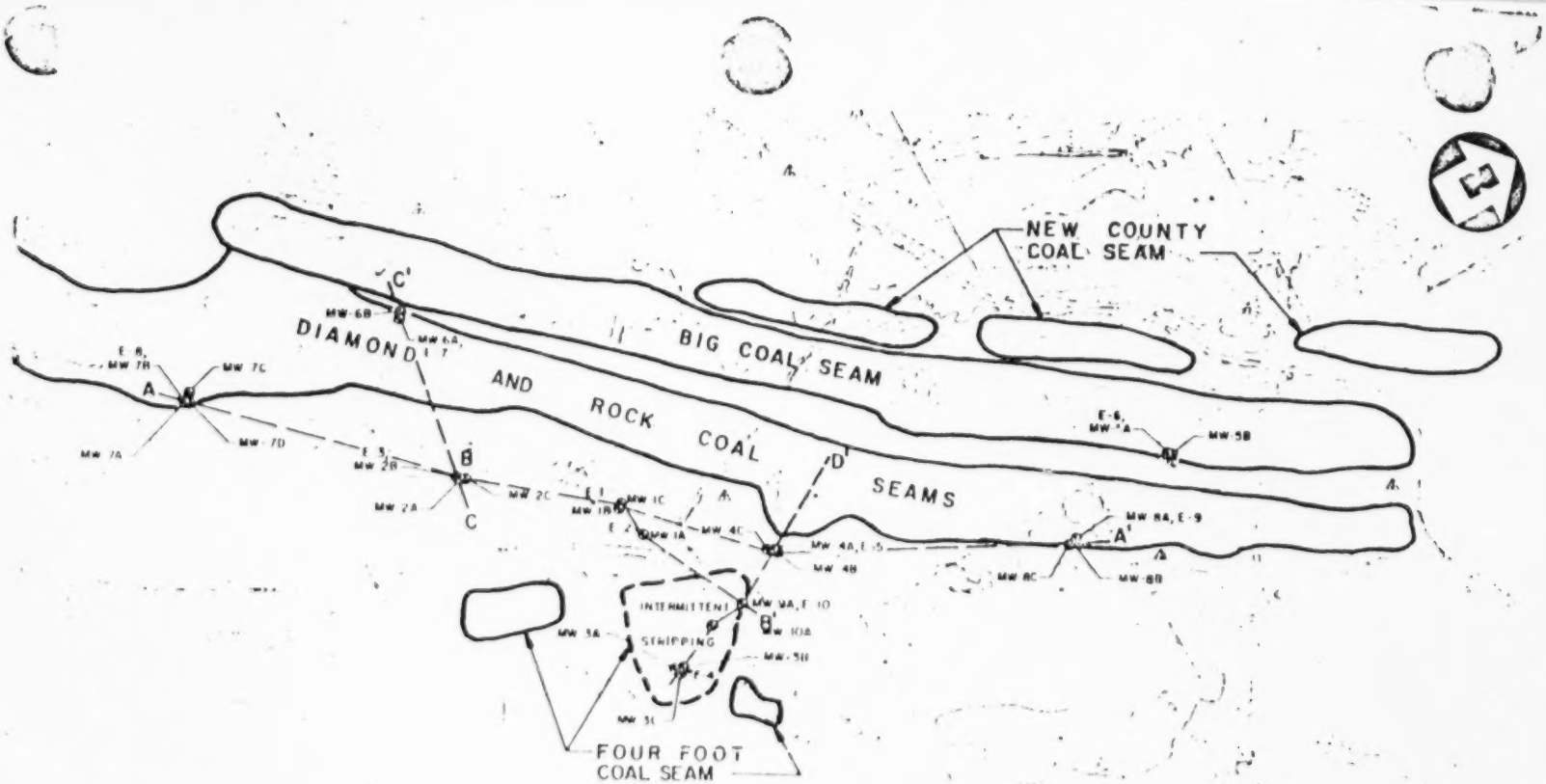
Figure 4 shows the locations of monitoring wells at the site and the location of coal seams and Figure 5 is a generalized geologic cross section of the site. Chapter 5 of the Remedial Investigation Report contains an extensive discussion of the site geology and hydrogeology.

Ground Water Analytical Results

In the June 28, 1985 ROD reference is made to a release of contaminants into a coal seam monitored by Well 3C based on the analysis of samples collected from this well in September 1984. As noted in the RI report, the data validation review of these results found that the reported results are of questionable accuracy. Additionally, the two subsequent sampling efforts that were attempted did not identify any contamination. In November 1984 an attempt was made to sample the well but, because of the aquifer dewatering discussed above, there was insufficient water in the well to collect a sample of adequate volume for analysis. Samples collected in April 1985 did not contain any of the compounds reported in the September samples.

Based on the facts that (1) the validity of the analytical results from the samples collected in September 1984 is questionable, and (2) subsequent sampling efforts at this well did not identify contamination, an adequately documented and verified release of contaminants to ground water at Well 3C has not occurred.

The analytical results from the other wells, as discussed in the June, 1985 ROD, found no significant contamination. The only organics reported were low parts per billion levels of methylene chloride and bis (2-ethylhexyl) phthalate. There was no apparent pattern to the detection of these



LEGEND

- MW-1A & MONITORING WELL B EXPLORATION BORING
- EXPLORATION BORING
- APPROXIMATE LIMIT OF FORMER STRIP PIT OF ASSOCIATED COAL SEAM
- MW-8 MONITORING WELL
- A A' CROSS SECTION LOCATION

(1) INFORMATION CONCERNING LOCATION OF STRIP PITS TAKEN FROM MINE MAPS ON FILE AT THE OFFICE OF SURFACE MINING, WILKES BARRE, PA

NOTE:
1. SEE CROSS SECTION A-A', FIGURE 5.2
2. SEE CROSS SECTION B-B', FIGURE 5.3
3. SEE CROSS SECTION C-C', FIGURE 5.4
4. SEE CROSS SECTION D-D', FIGURE 5.5
5. FOR DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS, SEE BORING AND GEOPHYSICAL LOGS IN APPENDICES D AND E

FIGURE 4

STRIP MINE PITS,
MONITORING WELL LOCATIONS/CROSS SECTIONS A-A' THROUGH D-D'
TAYLOR BOROUGH SITE, TAYLOR BOROUGH, PA
SCALE AS SHOWN

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SCALE IN FEET

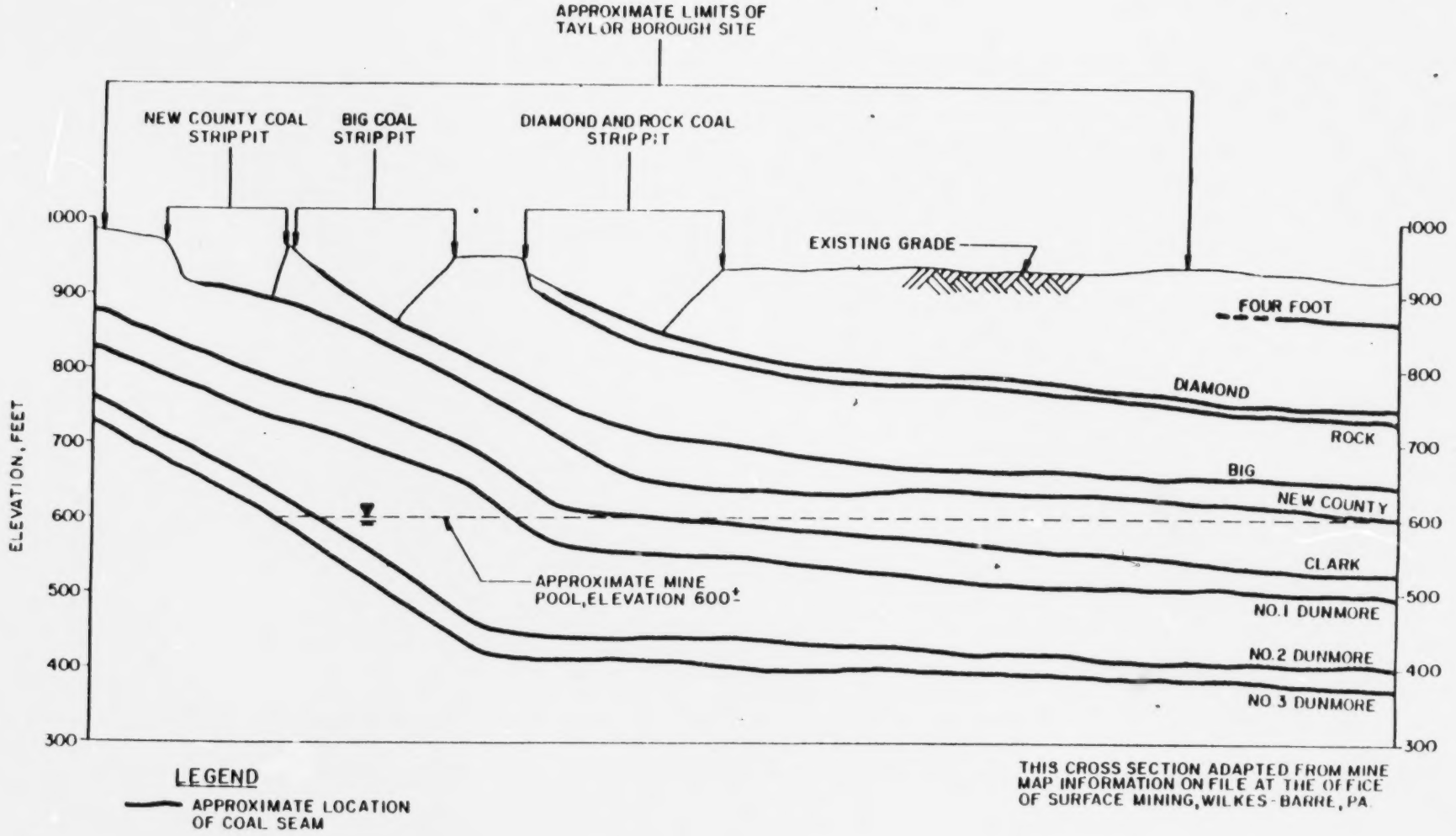

FIGURE 5

GENERALIZED GEOLOGIC CROSS SECTION

TAYLOR BOROUGH SITE, TAYLOR BOROUGH, PA

compounds. Additionally both compounds are common sampling and/or analytical laboratory contaminants (methylene chloride is used to wash bottles and bis (2-ethylhexyl) pthalate is a common plastisizer).

The data suggests that no release to ground water occurred at this site during the RI.

Recommended Alternative

Since no release has been documented at the site, there is no need for ground water remedial action at this time, thus a no action alternative is recommended. However, a monitoring program is warranted to verify over time that no release is occurring. To meet this objective existing monitoring wells in the coal seams underlying the site (wells 1B, 2C, 3C, 4C, 5B, 6A, 7C, 7D, 8B) should be monitored on a semiannual basis for all priority pollutant volatile organics and Hazardous Substance List metals for, at a minimum, five years after the surface remedial action is completed. The National Contingency plan would permit the period to be extended if necessary to protect public health and or the environment.

Costs and Schedule

It is estimated that the current cost to conduct one round of sampling and analysis for metals and volatiles for the monitoring wells identified above is $8,000, or $16,000 for semi-annual monitoring. Assuming a discount rate of 10%, the present worth costs of a five year semi-annual monitoring program will be approximatley $67,000.

This program will require 10 rounds of sampling spaced approximately six months apart. The sampling should be conducted in the early spring (March or April) and the end of summer (August or September) of each year because this will provide data from wet weather conditions and dry weather conditions. The Pennsylvania DER is prepared to implement the Operation & Maintenace requirements of this remedy.

Consistency with other Environmental Laws

40 C.F.R. Part 264 Subpart F requires ground water monitoring after closure of a hazardous waste facility. The RCRA regulations do not, however, ideally fit the conditions at this site. The complex natural geology, strip mining, deep mining and landfilling have altered natural flows and dewatered natural aquifers such that it is technically impracticable to satisfy the details of the RCRA ground water monitoring regulations.

As discussed in §300.68(i)(5)(iii) of the National Contingency Plan, when it is technically impracticable to comply with applicable or relevant and appropriate Federal public health and environmental requirements EPA should select an alternative that is reasonable from an engineering perspective and that most closely approaches the level of protection provided by applicable or relevant and appropiate Federal

public health requirements, in this case the RCRA ground water monitoring requirements. The intent of a monitoring program at this site will be to determine if a release is occurring, which is also the intent of the RCRA regulations.

The recommended monitoring well network, installed during the RI, was designed to detect a ground water release. Although, because of the unusual site characteristics, the monitoring network does not strictly meet the technical requirements of RCRA (i.e. sampling in the natural uppermost aquifers is not possible due to dewatering), the network will, in a cost-effective manner, serve to detect releases from the site.

The purpose of the monitoring program is to determine if there is a release above background levels. However, there are no upgradient wells which have produced water to date (because of the aquifer dewatering) to provide upgradient background data. Therefore, during design the validated priority pollutant data taken from the onsite and downgradient wells, all of which show no site related contamination, and any other appropriate data, will be used to establish background levels. Although this does not strictly satisfy the RCRA requirements of 40 C.F.R. §264.98, Detection Monitoring, it meets the intent to the greatest extent practicable given the unusual site conditions.

In order to protect human health and the environment, the monitoring period should be of sufficient time to determine if a release will occur as discussed in 40 C.F.R. §264.117(a)(2)(i) of the RCRA regulations. This site was used as a landfill until 1968, therefore, the site has had 18 years to generate leachate to contaminate ground water. Since the sampling in 1984 and 1985 found no contamination, it appears that the potential for a new source of leachate to be generated this many years after dumping ceased, and thus cause ground water contamination, is low. Therefore, if monitoring continues for five years after the surface remedial actions are completed (until 1992 assuming the surface action is completed in 1987) and no release is detected, public health and the environment will be adequately protected because it will have been 24 years since the landfilling ceased and it would be reasonable to believe that the site is secure. The five year monitoring period is also consistent with the five year monitoring period for surface water and soils required by the June 28, 1985 Record of Decision for the surface remediation. The monitoring period may be extended, however, if deemed necessary by EPA.

Priority pollutant volatile organics and metals were selected as indicator parameters in order to satisfy the requirements of 40 C.F.R. §264.98 (c). Volatile organics were found in the drums prior to their removal and have been found in the soil. Generally, they are mobile and persistent in ground water. Metals were selected because the contaminated soil contained metals and metals are very persistent. Volatile organics and metals can be easily detected at the low parts per billion concentration using standard analytical methods. The samples were analyzed for these

parameters during every sampling round during the RI and, thus, there should be sufficient existing data on concentrations and variation to establish a background level.

As per the requirements of 40 C.F.R. §264.98(d), the monitoring shall be conducted semi-annually.

RESPONSIVENESS SUMMARY

On June 4, 1985 EPA held a public meeting to discuss the remedial actions at the site. At that meeting EPA proposed to take no action in regard to ground water remediation and to require a ground water monitoring program. EPA also received written comments from a steering committee of potential responsible parties on June 10, 1985, June 14, 1985, and June 21, 1985.

The PRP committee did not object to EPA's proposal for no action in regard to ground water remediation, but, the committee did state that the monitoring program described in the feasibility study (ie. installing additional wells and monitoring for all priority pollutants for the next 30 years) was "clearly unwarranted and unsubstantiated by the data contained in the RI/FS". The PRPs proposed remedial action plan did not include a ground water monitoring program.

EPA has fully considered the comments of the PRP committee and has retained the no action alternative in respect to ground water remediation. In regard to the monitoring program, EPA has considered the PRPs comments and has decided to improve the efficiency and cost-effectiveness of the monitoring program by requiring a minimum of 5 years of monitoring for priority pollutant metals and volatile organics using 9 of the existing monitoring wells. EPA believes a monitoring program is still necessary to meet the intent of RCRA and has technical merit because it is prudent to verify that there is no continuing release of contaminants which EPA should consider.

Comments from the general public favored the recommended alternative. EPA has selected the two components of the recommended alternative: (1) no action in regard to ground water remediation and (2) a ground water monitoring program. The monitoring program selected in this Record of Decision has minor differences in technical requirements (ie. shorter minimum duration) than that discussed in the feasibility study. The differences are intended to improve the cost-effectiveness of the program only. The program will remain reasonable and sufficient to detect ground water releases and will be protective of public health and the environment. The National Contingency Plan would permit modifications to the monitoring program (ie. longer duration) if site conditions warranted and it became necesary for protection of the public health and/or the environment. Therefore, the selected alternative and monitoring program is substantively equivalent to the recommended alternative.